



Bacteria Reduction in Stormwater- the MS4 Approach

February 12, 2015

**Southern California Alliance
of
Publicly Owned Treatment Works**

Agenda

- WQIP Planning Process
- Numeric Goals
- Strategies
- Next Steps

Regulatory Framework

- Regional MS₄ Permit approved 2013
 - SD County
 - S. Orange County
 - S. Riverside County

- Significant changes to previous NPDES permit(s)

- Approach:

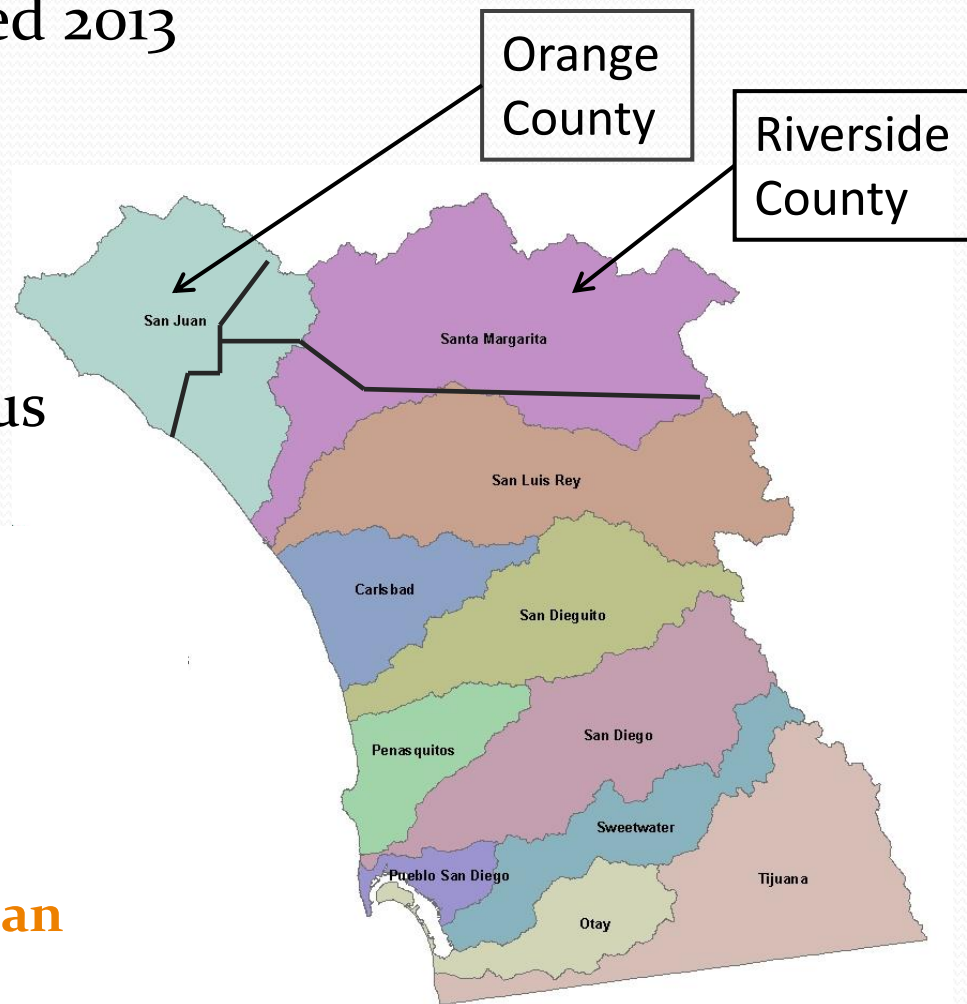
Watershed vs jurisdictional

- Performance:

Outcome vs activity-based

- Foundation:

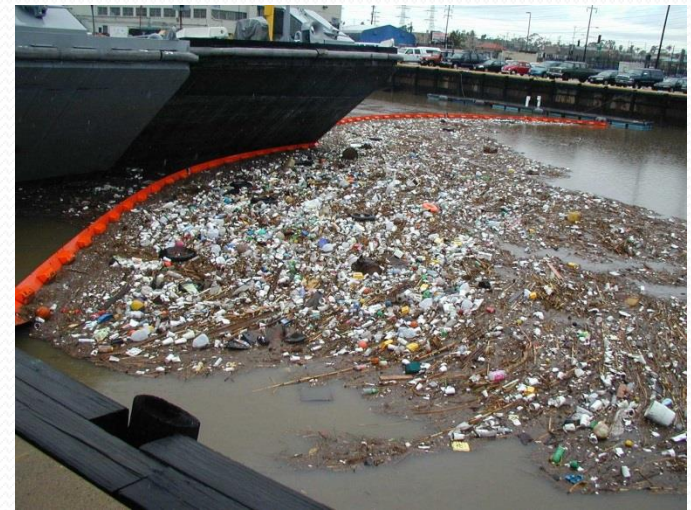
Water Quality Improvement Plan



Water Quality Improvement Plan(s)



- Defined process
- MS₄ discharge-focused



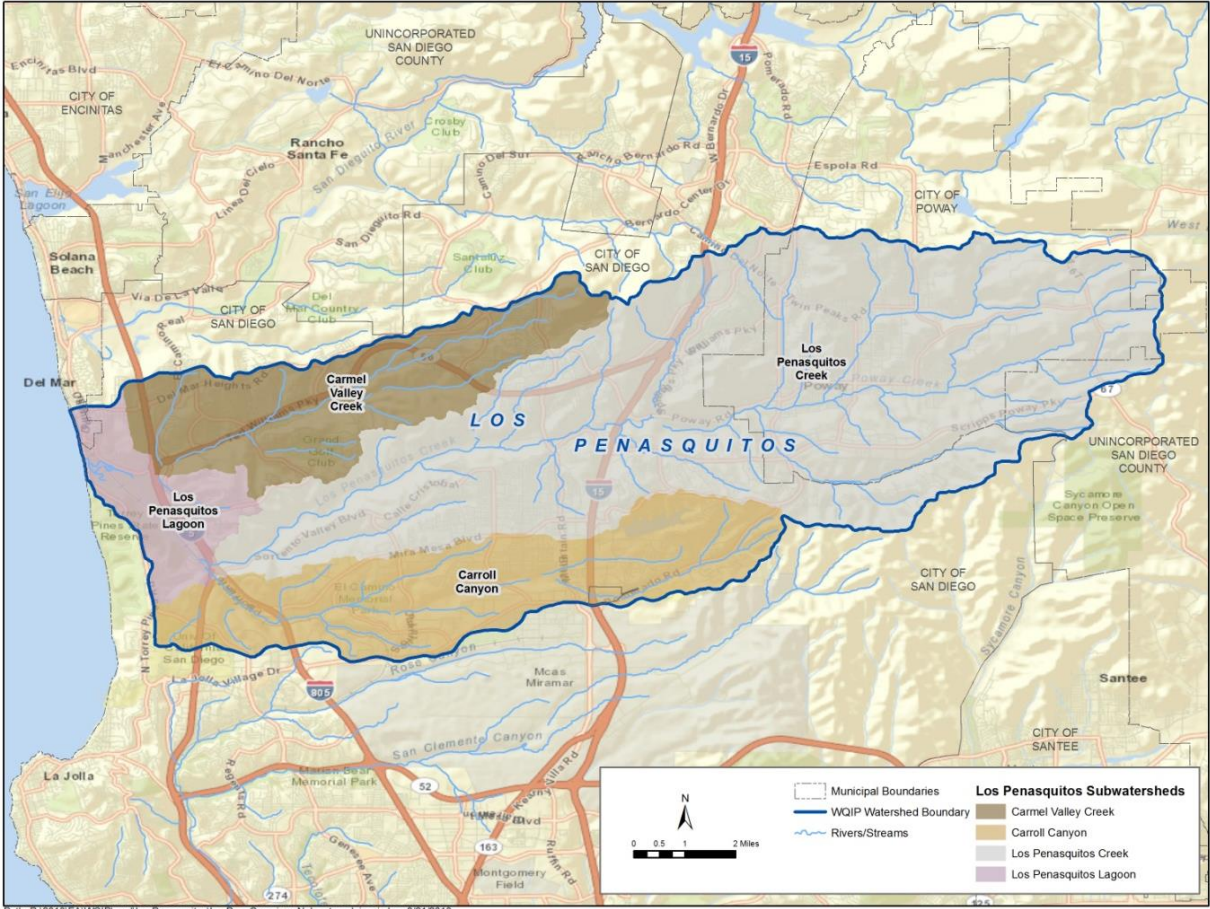
Priority Water Quality Conditions

Sources

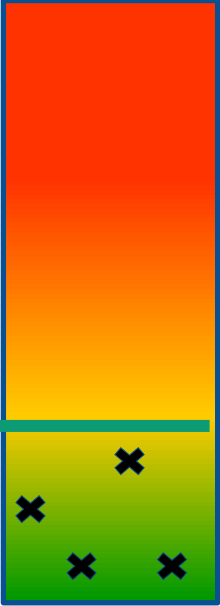
Goals, Strategies, Schedules

Monitoring and Assessment

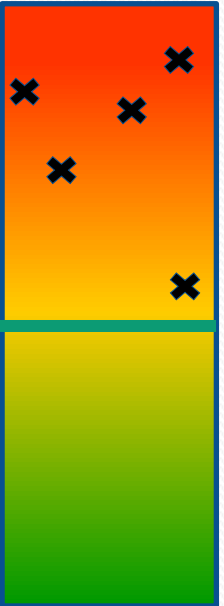
Adaptive Management Process



Concentration



Metals



Bacteria

Priority Water
Quality
Conditions

Sources

Goals,
Strategies,
Schedules

Monitoring
and
Assessment

Adaptive
Management
Process



Over-irrigation



Roadways



Trash



Pet waste

Priority Water
Quality
Conditions

Sources

Strategies
Goals,
Schedules

Monitoring
and
Assessment

Adaptive
Management
Process



Education



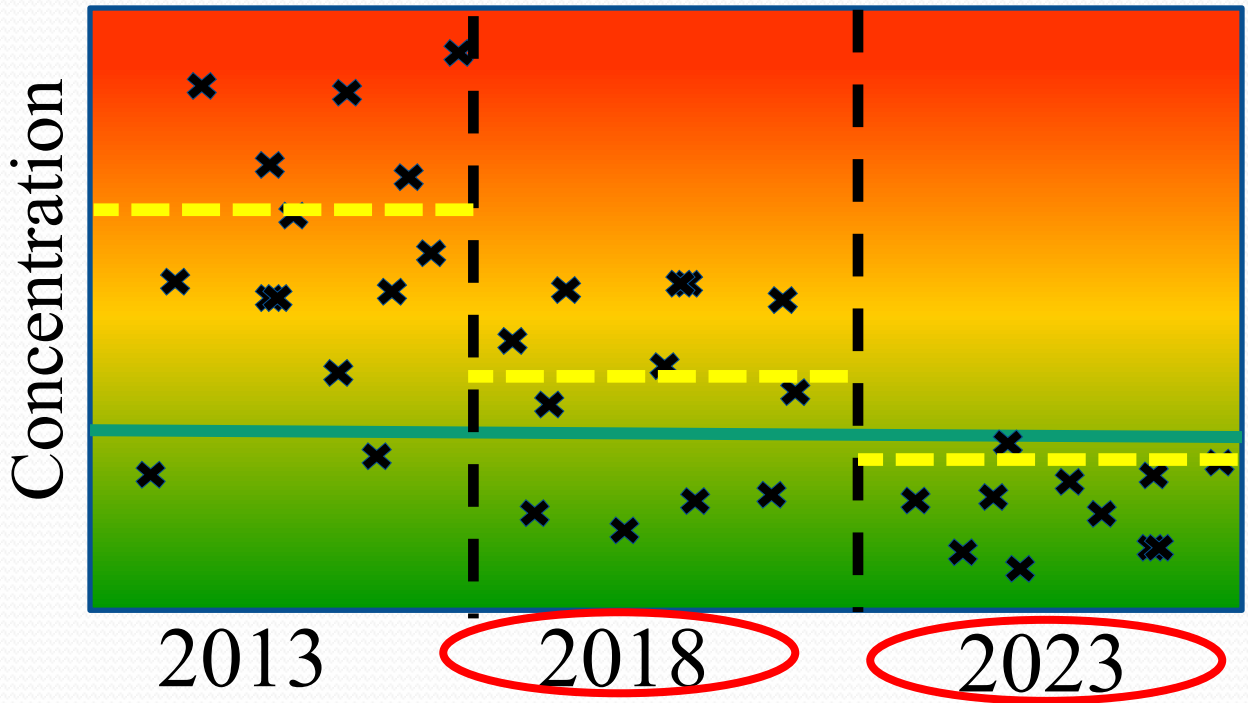
Street Sweeping



Green Infrastructure



Stream Rehabilitation



Priority Water
Quality
Conditions

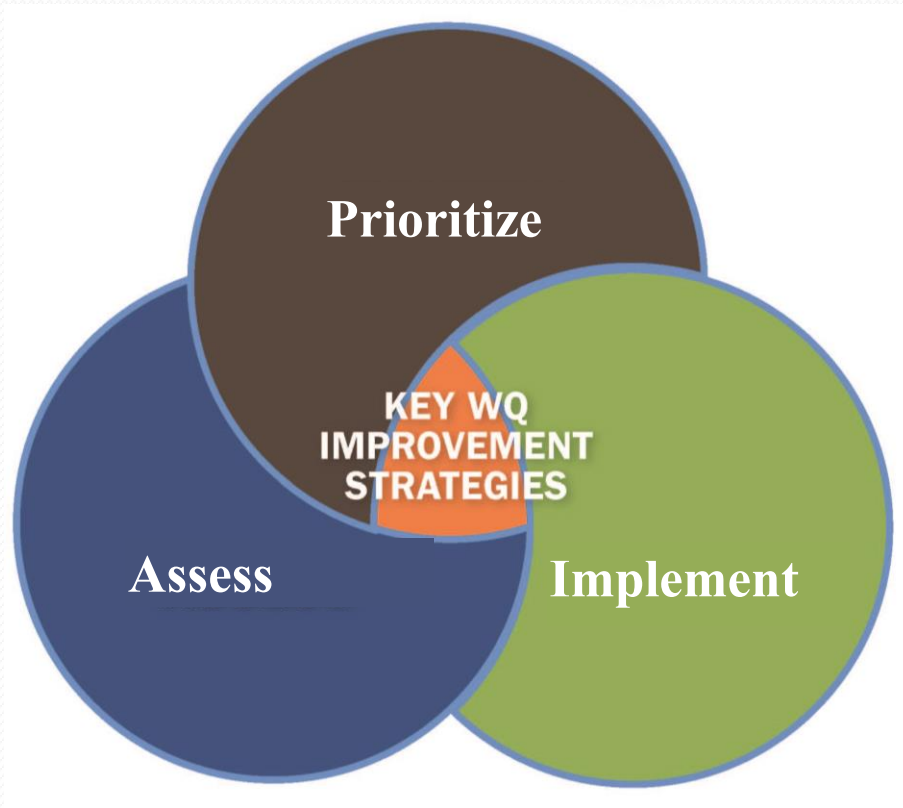
Sources

Goals,
Strategies,
Schedules

Monitoring
and
Assessment

Adaptive
Management
Process





Highest Priority Water Quality Conditions



Highest Priority Water Quality Conditions



Bacteria
Nutrients

Highest Priority Water Quality Conditions

Bacteria



Highest Priority Water Quality Conditions



Bacteria

Highest Priority Water Quality Conditions



Bacteria
Sediment
Freshwater



Highest Priority Water Quality Conditions



Bacteria
Sediment



Highest Priority Water Quality Conditions



Bacteria

Highest Priority Water Quality Conditions



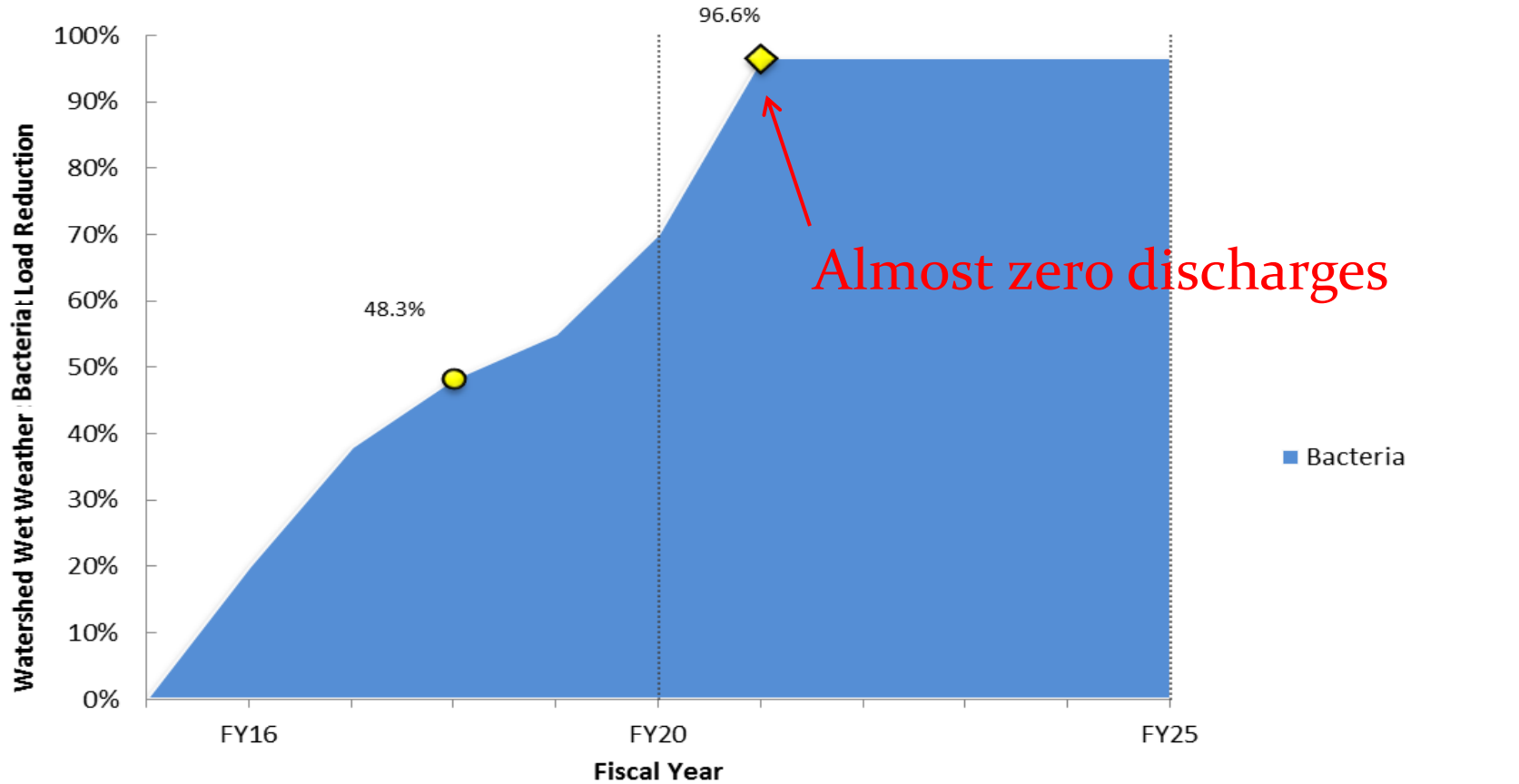
Bacteria
Metals

Highest Priority Water Quality Conditions



Sediment

Goals- Example Bacteria Reduction



Goals- (Other) Numeric

- Performance goals
 - Flexible
 - Measurable
 - Jurisdictional
 - Used as proxy to measure and show progress towards meeting final goals

Examples of Performance Metrics

- # gallons captured and reused by rain barrels
- % reduction in dry weather outfall flows
- # ac/ft of impervious surfaces* replaced
 - *municipal pervious surfaces
- BMP implementation after residential water audit

Examples of Key Strategies

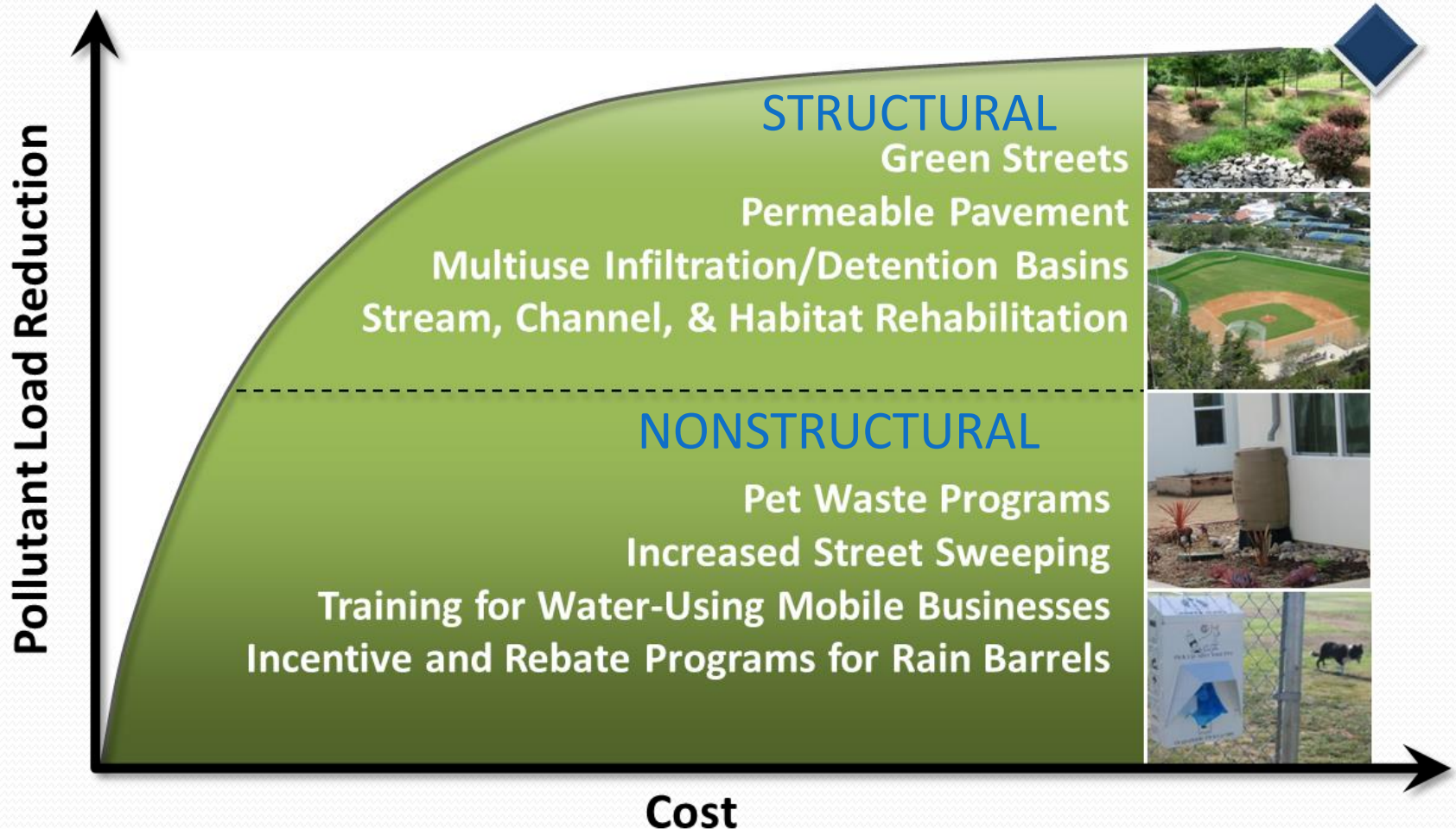
“Non-structural”

- HOA outreach and incentives
- Water conservation/irrigation runoff reduction
- Catch basin cleaning
- Street sweeping
- Property-based business inspections

“Structural”

- Green Infrastructure
- Stream rehabilitation

Recommended Strategies



Key Strategies- Sewer Considerations

- Fats, Oil, Grease Collaboration Project
 - Collaborative inspections
 - Reduce backups and overflows
- Sanitary Sewer Overflow Prevention
 - Evaluate maintenance frequencies and FOG program policies
- Sanitary Sewer Infrastructure Replacement

Summary

- MS4 regulatory framework requires watershed planning
- San Diego WQIPs nearly complete
- Bacteria is high priority throughout County
 - Extensive load reductions required
- Strategy implementation may have direct impacts to sewer system operators

Questions?

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